



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/628,579      | 07/29/2003  | Mark C. Carroll      | 22129-00007-US1     | 4098             |

30678 7590 10/19/2005

CONNOLLY BOVE LODGE & HUTZ LLP  
SUITE 800  
1990 M STREET NW  
WASHINGTON, DC 20036-3425

|          |
|----------|
| EXAMINER |
|----------|

MORILLO, JANEL COMBS

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1742

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/628,579

Applicant(s)

CARROLL ET AL.

Examiner

Janelle Combs-Morillo

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9-17 and 19-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,9-17 and 19-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/1/2005</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 6-8, 10-23, 25-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Haszler (US 6,342,113).

Haszler teaches Al-Mg alloy comprising (in wt%): 5-6% Mg, 0.6-1.2% Mn, 0.4-1.5% Zn, 0.05-0.25% Zr, max. 0.3% Cr, max. 0.4% Cu, max. 0.4% Ag (column 2 lines 64-66, column 3 lines 1-9). Haszler teaches an example with: 4.7% Mg, 0.8% Mn, 0.4% Zn, <0.01% Cr, 0.1% Cu, balance aluminum (see ex. A9 in Table 1), which falls within the presently claimed alloying ranges (cl. 1, 4, 6, 7, 10-14, 17, 19, 20, 40, 41).

Concerning claims 1, 4, 7, 17, 33-39, which mention a tau phase or a sensitization treatment (and/or properties related to said phase or treatment), Haszler mentions said Al-Mg alloy is exposed to temperature of 100°C (column 10 lines 50-58), which simulates the actual service temperature, which falls within the presently claimed heat treatment temperature. Because Haszler teaches an identical alloy processed substantially as presently claimed, then substantially the same phases, such as the tau phase; and properties, such as mass loss or elongation, are expected to be inherently present. "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas

Art Unit: 1742

Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See MPEP § 2112.

Concerning claims 15-16, 21-23, 25-32, Haszler teaches said alloy is particularly suitable for large welded structures such as storage containers, vessels for marine and land transportation, tanks, etc. (column 1 lines 13-17).

3. Claims 1, 4, 6, 7, 10-14, 17, 19, 20, 33-41 are rejected under 35 U.S.C. 102(a) as being anticipated by “Effects of minor Cu additions on a Zn-modified Al-5083 alloy” (hereinafter Carroll).

Carroll teaches an aluminum alloy example within the presently claimed alloying ranges (wt%): 4.1% Mg, 0.49% Mn, 0.58% Zn, 0.073% Cu, balance aluminum (see Table 1 p 426), wherein said alloy is subject to a sensitization treatment at 165°C (p 426 top of page), thereby obtaining the quaternary  $\tau$ -phase (p 427), substantially as claims in instant claims 1-4, 6-8, 10-14, 17-20, 40-41.

Concerning claims 17 and 33-39, which mention various properties related to said  $\tau$ -phase or the sensitization treatment, because the temperature mentioned by Carroll falls within the presently claimed temperature range, then substantially the same effects, such as simulation of actual conditions of use, is held to be inherently present. Because Carroll teaches an identical alloy processed substantially as presently claimed, then substantially the same phases, such as the tau phase; and properties, such as mass loss or elongation, are expected to be inherently present.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-7, 9-17, 19-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haszler (US 6,342,113).

Haszler is discussed in paragraphs above.

Haszler teaches Al-Mg alloy comprising (in wt%): 5-6% Mg, 0.6-1.2% Mn, 0.4-1.5% Zn, 0.05-0.25% Zr, max. 0.3% Cr, max. 0.4% Cu, max. 0.4% Ag (column 2 lines 64-66, column 3 lines 1-9), which overlaps or touches the boundary of the presently claimed alloying ranges (cl. 1, 4-7, 9-14, 17, 19, 20, 40, 41). Because Haszler teaches overlapping alloying ranges, it is held that Haszler has created a prima facie case of obviousness of the presently claimed invention. Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility.

Concerning claims 1, 4, 7, 17, 33-39, which mention a tau phase or a sensitization treatment (and/or properties related to said phase or treatment), Haszler mentions said Al-Mg alloy is exposed to temperature of 100°C (ex. 3 of Haszler, see esp. column 10 lines 47-50), which simulates the actual service temperature, which falls within the presently claimed heat

Art Unit: 1742

treatment temperature. Additionally, Haszler teaches heat treating at a minimum temperature of 200°C, which touches the boundary of the presently claimed heat treatment maximum.

The examiner asserts that “products of identical chemical composition can not have mutually exclusive properties.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). A chemical composition and its properties are inseparable. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (tau phase, mass loss, elongation) are necessarily present. See MPEP 2112.01.

Concerning claims 15-16, 21-32, Haszler teaches said alloy is particularly suitable for large welded structures such as storage containers, vessels for marine and land transportation, tanks, etc. (column 1 lines 13-17).

6. Claims 5, 9, 15-16, and 21-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Effects of minor Cu additions on a Zn-modified Al-5083 alloy” (hereinafter Carroll) in view of Haszler.

Concerning claims 15-16, 21-32, Carroll does not mention said alloy is in the form of a marine product, etc. However, Haszler teaches substantially similar 5xxx series aluminum alloys are particularly suitable for large welded structures such as storage containers, vessels for marine and land transportation, tanks, etc. due to their excellent weldability and corrosion resistance (column 1 lines 13-17, column 2 lines 55-57). It would have been obvious to one of ordinary

Art Unit: 1742

skill in the art to form the 5xxx series alloy taught by Carroll into a large welded structure, such as a marine vehicle, because Haszler teaches substantially similar 5xxx series aluminum alloys are particularly suitable for large welded structures such as storage containers, vessels for marine and land transportation, tanks, etc. due to their excellent weldability and corrosion resistance (column 1 lines 13-17, column 2 lines 55-57).

Concerning claims 5 and 9, which mention Ag is added to said Al-Mg alloy, Haszler teaches that 0.05-0.4% Ag may be added to improve stress corrosion resistance (column 4 lines 56-58). It would have been obvious to one of ordinary skill in the art to add 0.05-0.4% Ag, as taught by Haszler, to the 5xxx series aluminum alloy taught by Carroll because Haszler teaches that 0.05-0.4% Ag may be added to improve stress corrosion resistance (column 4 lines 56-58).

### ***Response to Amendment***

7. In the response filed on August 1, 2005, applicant amended claims 1, 4, 7, 12-14, 17, and added new claims 40 and 41. The examiner agrees that no new matter has been added.

8. The declaration under 37 CFR 1.132 filed 8/01/2005 is insufficient to overcome the rejection of claims 1, 4-7, 9-17, 19-41 based upon "Effects of minor Cu additions on a Zn-modified Al-5083 alloy" as set forth in the last Office action because: though applicant has established that P.I. Gouma did not contribute the conception of the presently pending claims, it is not clear that the additional inventors Buchheit and Morere (who are not part of the inventorship of the reference publication) did not contribute to the instant claimed invention (thereby clearly establishing the publication is applicant's own work). Applicant's disclosure of his or her own work within the year before the application filing date cannot be used against him

Art Unit: 1742

or her under 35 U.S.C. 102(a), (In re Katz, 687 F.2d 450, 215 USPQ 14 (CCPA 1982)). See MPEP 2132.01.

9. In the last office action, claims were listed as alternatively rejected under 102(a) or 102(b) in view of "Effects of minor Cu additions on a Zn-modified Al-5083 alloy", because it was unclear if the reference was published more than a year prior to the effective filing date of the instant invention. Because the publication date of "Effects of minor Cu additions on a Zn-modified Al-5083 alloy", was December 2001 (see attached print out of [www.sciencedirect.com](http://www.sciencedirect.com)), it is now apparent that said article is not available as prior art under 102(b).

10. Applicant's argument that the present invention is allowable over the prior art of record because "the ternary Tau phase as obtained in Haszler was not as effective as expected", or the criticality of the Cu range is illustrated in Fig. 18 of the instant application, has not been found persuasive for reasons a) and/or b) below.

11. Concerning reason a), Applicant has not clearly shown an unobvious difference between the instant invention and the prior art's product. More particularly, once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to



Art Unit: 1742

product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)), see MPEP 2112. *In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed.Cir.1997). Applicant has not clearly shown an unobvious difference between the instant invention and the prior art's product.

12. Concerning reason b), the argument that the presently claimed invention shows unexpected results with regard to the prior art of record has not been found persuasive because there is "no adequate basis for reasonably concluding that the great number and variety of compositions included in the claims would behave in the same manner as the tested composition" *In re Lindner*, 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972). Applicant has not clearly shown specific unexpected results with respect to the prior art of record or criticality of the instant claimed range, wherein said results are fully commensurate in scope with the instantly claimed ranges (see MPEP 716.02 d). Figure 18 of the instant application appears to show that when an 5083 alloy contains a Cu range of 0.07-0.14% and a Zn range of 0.1-0.6, the elongation to failure is improved. This is not commensurate in scope with the instant claims, which are broadly drawn to any Al-Mg alloy with 0.05-0.2% Cu. It is not clear that these results occur over the entire claimed range.

13. Applicant's argument that the present invention is allowable over the prior art of record because Haszler does not teach the presently claimed sensitization treatment on the Al-Mg alloy product has not been found persuasive. The description of Ex. 3 of Haszler mentions the precipitation of anodic intermetallics on the grain boundaries (col. 10 lines 41-43), as well as continuous boundary network of anodic intermetallics for increased exposure time (col. 10 lines

Art Unit: 1742

45-46) for AA5083. The example of Haszler D1 does not form continuous grain boundary precipitates (col. 10 lines 55-56), but rather forms anodic intermetallics within the grains even after prolonged exposure (col. 10 lines 47-50). Therefore, Haszler is not saying that intermetallics are not formed, but is stating that anodic intermetallics within the grains are formed after exposure to a 100°C heat treatment.

14. Applicant's argument that the present invention is allowable over the prior art of record because Haszler teaches the presence of Zr which is excluded by the instant claim language of "consisting essentially of" has not been found persuasive. The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976), see MPEP 2111.03. The applicant has not shown that the addition of Zr would substantially change the "basic and novel characteristic(s)" of the claimed invention.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1742


CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCM  
October 17, 2005

ROY KING   
SUPERVISORY PATENT EXAMINER  
1800 - 1000